STATE OF ARIZONA

SCHOOL FACILITIES BOARD

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Arizona Safe Schools
Recommendations of the Arizona School Facilities Board

In late 2006, the Governor's Office asked the Arizona School Facilities Board (SFB) to evaluate school security issues and to make recommendations for security measures that might be incorporated into new school construction. SFB staff performed an extensive literature review of nationally recommended best practices for enhancing school security and received public comments during an SFB Board meeting held on December 7, 2006. Staff compiled best practice recommendations from those public comments and from literature sources including federal and state law enforcement agencies, various State departments of education, recognized school security experts, and architects and planners engaged in school design.

What is clear is that school districts all over the country struggle with maintaining a balance between creating a user-friendly, welcoming school climate and providing a facility that is secure from unwanted intruders. Present day school design practices must reduce security risks but also maintain an efficient building function and aesthetic harmony while providing a school environment conducive to learning.

Arizona's K-12 school buildings are designed with longevity in mind. Security measures incorporated into their original design will influence the protection of the building and its occupants for decades. The SFB recognizes that designing security features into a school is only one aspect of a school security program that includes operational, technical, and physical safety components. However, it believes that there are nationally recommended physical features that can be incorporated into the site and building design that will provide an additional measure of security and allow facility users to feel that they are in a safe learning environment.

Crime Prevention Through Environmental Design

A national program for designing physical features to prevent crime is called Crime Prevention Through Environmental Design (CPTED). CPTED is a proactive crime prevention strategy utilized by urban planners, architects, police departments and security professionals that relies on the ability of design to influence offender decisions that precede criminal acts. CPTED principles are based around three primary school design features that include access control, natural surveillance, and the definition of territory. Dr. Jeffrey Lackney, an architect and school planner, defines those principles as follows:

1. Natural access control uses doors, shrubs, fences, gates and other physical design elements to discourage access to an area by all but its intended users.

2. Natural surveillance is achieved by placing windows in locations that allow intended users to see or be seen, while ensuring that intruders will be observed as well. Adequate lighting, glass and landscaping similarly are designed to permit unobstructed views and enhance surveillance opportunities.

3. Territorial reinforcement suggests that physical design can influence users to develop a sense of "ownership" that is perceived by potential offenders. Sidewalks, landscaping and other elements that establish boundaries between public and private areas promote territoriality.

Based upon comments received from SFB's Board and pubic comments from the December 7th Board meeting, a literature search, and design references such as CPTED, the SFB recommends that the following nine safety features be considered as an element of any school design.

1. Exterior Security Lighting

It is important to consider outdoor lighting since nearly all school buildings are used after dark. Exterior lighting should facilitate easy circulation and provide security for the building and its occupants. At a minimum, adequate vandal-proof lighting for parking areas, bus loading zones, pick-up/drop-off areas, bicycle parking areas, and walkways leading to building entrances should be provided.

On the building exteriors, wall mounted fixtures with vandal-resistant lens generally work best. Light poles are not desirable close to building walls because they may provide a means to access roofs or upper windows. Light poles are more suitable for parking areas, play areas and driveways. Timing systems should be considered in order to save energy by minimizing lamp time to only those hours necessary including zoning areas of the building and site that have different lighting needs.

Selection of exterior lighting should be based on specific site and application conditions that consider the amount of light cast on adjacent sites as well as contribution to light pollution.

2. Administrative Office Locations

The main entry of a school should be located at the front of the school or campus and should be well marked to guide visitors to the administration area. Placing the primary entry at the front of the building promotes natural surveillance, helps eliminate wandering visitors, and provides general access control. Good external visibility should be available to the parking area, main lobby and corridors. Security experts also generally recommend that no major delivery and receiving functions be allowed through the front entrance.

The administration office should have a direct relationship to core instructional and non-instructional facilities, particularly those with after-hours community use. Open and flexible layouts allow office staff to visually supervise and control the entire administration complex, particularly the reception/waiting area and private office areas. For occupant safety, private office doors in the administration area should have sidelights or windows in doors for clear visibility into corridors.
CPTED principles suggest that territory is reinforced when high visibility of and from the administration area is combined with the assertive placement of the main office.

3. Classroom Door Hardware

Classroom safety can be improved through the use of specific types of door hardware. Traditional classroom locksets require that the door be locked from the outside while the inside lever remains operable, which mean that unauthorized individuals cannot lock or unlock doors without a key. But in

an security emergency situation it forces teachers to open the door from the inside, insert their key in the outside cylinder, turn the key to lock the door, and then close it again, which may actually expose the teacher to the very danger they are locking the door against.

A “security classroom function” lockset has a cylinder on the inside that locks the outside lever. Teachers can lock the classroom door without having to go into the corridor. This lock type provides a door lock on the corridor side to protect occupants, yet the lever handle inside the room retracts the latch bolt with one motion for fast egress.

Classroom door handles and locks must meet fire code requirements for exits. Therefore, it is recommended that the jurisdictional fire authority approve classroom door locks prior to installation.

4. Student Restroom Configuration

Student violence data suggests that restroom areas are a common location for negative behavioral activities on school campuses. Student restroom security concerns vary depending on the age of the users. Restrooms should be designed to facilitate supervision, sized to avoid congestion, and convenient to the areas they serve in order to provide natural surveillance. A design challenge is to create restrooms for students that can be easily monitored by teachers of the opposite gender.

Many security consultants suggest that a maze entry consisting of a privacy screen wall that is walked around to enter a restroom rather than a door or a vestibule with doors makes audible supervision considerably easier. An added benefit is that this type of design may also help to prevent vandalism and make maintenance functions easier to perform.

Another design feature that provides a basic level of security is the placement of lavatories (also called gang sinks) in a corridor just outside male and female student restrooms. This location permits both genders to use the same lavatories, which reduces the likelihood of vandalism and horseplay and keeps students under visual supervision by adults as long as possible.

5. Vestibule Entry

The goal of any school is to create a warm and welcoming school environment for staff, students and the community. However, school administrators frequently must consider how to maintain that environment yet integrate school security devices that may suggest an institutional and impersonal climate.

As a less obtrusive entry control device, some architects use CPTED principles to design main school entrances with a double door vestibule with the interior vestibule doors locked during class times. A second entrance within the vestibule either opens directly into the administration reception area where visitors check in prior to being admitted to student areas or requires that visitors be electronically “buzzed in” to the administration area.

6. Sidelights

Sidelights (windows next to doors) provide an additional security measure to classroom design. Sidelights allow teachers to keep an eye on corridors or adjacent student activity areas and to quickly see who is entering the room. Many districts specifically require sidelights next to doors on the door handle side as an added security feature. When sidelights are located next to the door handle side of doors rather than the hinge side, doors in the open position do not block the view through the sidelight.

Doors with integral windows and sidelights next to doors must meet certain specific building code requirements regarding fire safety. Jurisdictional fire authorities and code officials should always be consulted prior to the addition of such features.

7. Perimeter Fencing

Perimeter fencing enclosing a campus is more to keep outsiders out than to keep insiders in. Security experts note that fencing cannot keep someone out who is determined to enter the campus and comes prepared to do so with devices such as a ladder and wire clippers or smashes through with a vehicle. However, limiting site access decreases the opportunity for crime by increasing the effort required to gain access to a school site and by limiting entry points onto school grounds. Site entry points located in high visibility areas can be easily observed and monitored by school personnel.

While wrought iron fencing is visually attractive, 8-foot chain link fence with small mesh (1-inch to 1-1/2 inches) is considerably less expensive and provides an excellent barrier. Unlike a 6-foot high chain link fence, it is difficult to pull up on the fence and the small mesh doesn't permit toeholds. While chain link fencing that is 8-foot high is about twice the cost per running foot as 6-foot high fence, a site-specific risk assessment may determine that the additional height is warranted.

Current SFB rules provide for 6-foot fencing on Kindergarten through 6th grade campuses. The SFB recommends 8-foot fencing for all school sites.

8. Security Alarms

Teachers and learners need to feel safe within their classroom environments. Classroom telephones and public address systems generally afford teachers immediate communication with school administration or law enforcement personnel. In some extreme situations telephone use might not be possible or discretion is required when transmitting a request for help. Panic buttons are a common type of duress alarm found in schools. The simplest application is a wall-mounted or under-desk mounted button that when pushed sounds either an audible or inaudible alarm to another location through wired or wireless transmission. Audible alarms can be combined with such devices as a corridor flashing light, a horn, or both.

Duress alarms vary widely in system capability and cost. There are three broad categories of duress alarms that can send one or more levels of distress signals to a particular location:

a. A simple panic-button alarm affixed to a location, such as described above.
b. Portable identification alarms that identify the device owner.
c. Portable identification/location alarms that identify, locate, and track the device owner who activated the alarm.

The SFB recommends that a base security alarm system be provided that includes item b. a portable identification alarm that identifies the device owner.

9. Security Cameras

Some school districts have elected to use video cameras alone or as part of a closed circuit television (CCTV) system in order to further protect students and faculty. From the standpoint of school personnel who handle daily security issues, cameras help distinguish between outsiders who do not belong on campus and students and employees who do.

According to a Department of Justice research study of security cameras in schools, cameras are beneficial because of the strong evidence they can preserve on tape for the use of school administration officials. The study notes that when students are shown a tape of themselves in an illegal or unacceptable act, even if the tape might not have been of sufficient resolution and detail to use for prosecution purposes in court, they usually admit to the incident.

Another benefit of using security cameras in public areas on school grounds is that staff who are normally assigned to oversee an area can instead be made available to monitor other areas of concern.

SFB staff recommends a base camera system that provides coverage of key playground areas building entries, main commons areas, gymnasium, cafeteria, and includes a computer network interface.

SFB Recommendations for Funding of Security Elements

Items One Through Six: School safety features one through six have either no cost or are funded by or capable of being funded within current SFB guidelines.

Items Seven Through Nine: SFB staff recommends that security features 7. Perimeter Fencing, 8. Security Alarms, and 9. Security Cameras be presented to the Arizona State Legislature during the 2008 legislative session for consideration of additional funding to incorporate the features into the design of all new construction projects.

Conclusions:
Kenneth Trump, president of National School Safety and Security Services, a security consulting firm to school districts, states that it is possible for school districts to create a false sense of security in their response to high-profile school violence tragedies by installing security equipment and other physical and tangible measures simply to demonstrate to students, staff, parents, the media, and the overall school community in their commitment to school security without first accurately assessing what the most effective site specific needs may be. He recommends that school districts take time to assess safety risks before installing security equipment or putting other safety measures in place.

He provided three questions for school districts to consider before purchasing security devices such as camera and alarm systems:

a. What specific security threats and concerns are you attempting to address by using a particular type of security equipment?
b. How will this equipment help address these threats and how will you actually use it on a day-to-day basis?
c. Once the equipment is purchased, how will it be maintained, repaired and upgraded, as necessary?

Finally, he observed that there are three common problems with school district decisions made when considering security equipment:

a. Failure to identify where security technology can be appropriately used.
b. Poor purchasing practices related to school security equipment.

c. Failure to integrate the use of equipment with human, procedural and other school safety strategies.

The School Facilities Board does not suggest that implementation of the nine school security design elements will accommodate all school security situations and conditions. However, it believes that consideration of CPTED principles as well as the nine design elements should be a part of any school district's new construction design objectives. The SFB further believes that incorporation of the design elements during the planning phase for a new school can be cost effective when considered as a part of an overall school security program.